

Trend Study 16A-17-02

Study site name: Chicken Creek.

Vegetation type: Stansbury Cliffrose.

Compass bearing: frequency baseline 280 degrees magnetic (line 2 @ 298°M, lines 3 and 4 @ 357°M).

Frequency belt placement: line 1 (11 & 71ft), line 2 (34ft), line 3 (95ft), line 4 (59ft).

LOCATION DESCRIPTION

From the intersection of 100 South and Main Street in Levan, proceed east on 100 South for 1.55 miles to a fork. Turn right (south) and proceed 0.40 miles towards Chicken Creek to a road to the left. Turn left and proceed east for 0.30 miles to a green steel "T" fencepost on the north side of the road (fencepost may no longer exist). From the fencepost, walk up slope at an azimuth of 344 degrees true to the eastern most juniper on the ridge. There is a section marker and witness post next to the juniper. The 0-foot baseline stake is located 50 feet away at an azimuth 355 degrees magnetic. The study is marked by green, steel "T" fenceposts approximately 12 to 18 inches in height.



DISCUSSION

Chicken Creek - Trend Study No. 16A-17

The Chicken Creek study is located on deer winter range near the mouth of Chicken Creek Canyon. The site samples a Stansbury cliffrose type with serviceberry, juniper, mountain big sagebrush, and Gambel oak intermixed. The study area sits on a narrow bench with shale covered slopes ranging from 10% to 60%. Elevation is about 5,700 feet. Pellet groups were abundant in 1983. Quadrat frequency of deer pellet groups was moderately high at 39% in 1997, with few elk pellet groups being sampled. A pellet group transect read along the study baseline in 2002 estimated 74 deer days use/acre (182 ddu/ha) and 2 elk days use/acre (5 edu/ha). Most of the deer pellet groups appeared to be from winter use.

Soil depth appears moderate, but badly eroded. The soil is actually deep in places with an effective rooting depth estimated at nearly 22 inches. Parent material is limestone with many gravel-sized fragments covering the surface. Larger rock outcrops are also found on the site. The soil has a clay loam texture with a neutral pH of 6.9. Soil pedestalling is common on the site and the area appears geologically unstable. Several large cracks in the ground surface were noted in 1983 and are indicative of a high potential for slippage or landslides. There is not a lot of exposed bare ground but the soil erosion condition classification was determined to be slight in 2002.

The key browse species are Stansbury cliffrose and serviceberry although both occur in low densities. Some other species are more abundant, but not nearly as preferred or productive. Cliffrose provides about one-half of the limited browse cover. Many of the mature plants are tall and partly unavailable to browsing. Population density was originally estimated at 399 plants/acre in 1983. Percent decadence was high at 83% and utilization was very heavy on available plants. Percent decadence remained at 83% in 1989 and use remained heavy on half of the cliffrose. By 1997, density was estimated at 240 plants/acre with the larger sample size. Dead plants, first counted in 1997, numbered 100 plants/acre. Recruitment was poor with one seedling encountered in 1997. Seedlings of cliffrose have difficulty competing and establishing within dense understories of annual weeds, but what is of more concern for the preferred browse is the potential for the loss of the community to wildfire. Density of cliffrose was estimated at 460 plants/acre in 2002. Use remained heavy on available plants. Due to drought conditions, vigor was poor on 22% of the plants sampled and 61% of the population was classified as decadent. Reproduction is nonexistent.

Serviceberry occurs only occasionally. All plants encountered in 1989 were heavily hedged. Currently ('02), the population density is low at only 60 plants/acre, with the entire population being classified as decadent. Other shrubs which provide some additional forage include a few mountain big sagebrush, true mountain mahogany, white-stemmed rubber rabbitbrush, chokecherry, and Gambel oak. All of these species, with the exception of oakbrush, occur sporadically. Oakbrush occurs in scattered clones. Mature plants are tall averaging more than 8 feet in height. It does not appear to have been utilized in 1997 and 2002.

The herbaceous understory is sparse and of poor quality. Cheatgrass provided over 40% of the grass cover in 1997 and 2002. However, it is not widespread over the site as it occurs mostly under the crowns of juniper trees. Bluebunch wheatgrass is the most abundant perennial grass on the site. It accounts for over half of the grass cover. The forb component is poor and contains several annuals.

1983 APPARENT TREND ASSESSMENT

Soil condition is poor. Rapid erosion has already removed much of the surface soil, leaving behind large areas of erosion pavement. Suitable seed beds for plant establishment are rare. Vegetative conditions appear to be declining. The most preferred browse species, cliffrose, serviceberry, and big sagebrush appear to be in a state of decline. Total browse density, forage production, and forage availability are very low. The herbaceous understory is depleted and what remains is of poor quality for deer. Management options are few due to the steep slope.

1989 TREND ASSESSMENT

Soil trend appears stable but in very poor condition. There is a very low percentage of litter cover, and pavement forms most of the ground cover, creating near-talus conditions. By the appearance of the hole and associated undercutting, the slope near density plot #1 will most likely experience another landslide. The juniper and cliffrose overstory dominate the site. Junipers are sparse, but evenly distributed over the whole hillside. There is a fair diversity of browse, but most of it is severely hedged to the point of unavailability and decadence. The density of cliffrose decreased to 199 plants/acre. The plants are largely decadent, heavily hedged and partly unavailable. There were fewer serviceberry and these are also in bad condition. Rubber rabbitbrush was the only browse to show an increase in density. The point-quarter method estimated there to be 10 junipers per acre. There are large stands of oakbrush on the slope below. Trend for the herbaceous understory is up slightly. There is a fair amount of bluebunch wheatgrass on the slope. Frequency increased slightly. There is a low frequency of forbs, and some species may have minor forage value.

TREND ASSESSMENT

soil - stable, but in poor condition (3)

browse - down (1)

herbaceous understory - up slightly, but poor (4)

1997 TREND ASSESSMENT

Trend for soil remains stable, but in poor condition. Trend for browse is stable. Density of cliffrose increased since 1989, but the change is likely due to the larger sample used in 1997. Dead plants are common and utilization continues to be heavy on available plants. On the positive side, vigor has improved and the number of decadent plants has declined from 83% to 33%. Recruitment remains poor. Gambel oak was picked up in the larger sample used this year. The population consists of tall vigorous plants which do not appear to be utilized. Trend for the herbaceous understory is down slightly due to a significant decline in the sum of nested frequency for bluebunch wheatgrass, the only common perennial grass. Composition of forbs is still very poor.

TREND ASSESSMENT

soil - stable, but in poor condition (3)

browse - stable (3)

herbaceous understory - slightly down and poor (2)

2002 TREND ASSESSMENT

Soil trend remains stable but condition is poor. There is little exposed bare ground due to the abundance of rock and pavement on the soil surface. The erosion condition classification was determined to be slight in 2002. Trend for the key browse species, cliffrose, is down slightly due to an increase in the number of decadent plants from 33% in 1997 to 61% in 2002. Utilization on available plants remains heavy and reproduction is nonexistent. Other desirable shrubs occur in very small numbers. Gambel oak is stable and unutilized with a density of 2,180 stems/acre. Trend for the herbaceous understory is stable and in very poor condition. Bluebunch wheatgrass is the only abundant perennial species. It currently provides 57% of the grass cover and 49% of the total herbaceous cover. It has declined slightly in nested frequency but not significantly. The only other perennial grass encountered included a limited number of Sandberg bluegrass. Cheatgrass is still abundant producing 42% of the grass cover. Perennial forbs are rare.

TREND ASSESSMENT

soil - stable but poor (3)

browse - down slightly for cliffrose (2)

herbaceous understory - stable but very poor (3)

HERBACEOUS TRENDS --

Herd unit 16A, Study no: 17

Type	Species	Nested Frequency				Quadrat Frequency				Average Cover %	
		'83	'89	'97	'02	'83	'89	'97	'02	'97	'02
G	Agropyron spicatum	_{ab} 150	_b 185	_a 139	_a 121	55	74	56	53	12.44	11.67
G	Bromus japonicus (a)	-	-	-	7	-	-	-	4	-	.04
G	Bromus tectorum (a)	-	-	260	253	-	-	86	86	10.29	8.61
G	Poa secunda	_a -	_b 25	_b 19	_b 15	-	13	8	6	.38	.13
Total for Annual Grasses		0	0	260	260	0	0	86	90	10.29	8.65
Total for Perennial Grasses		150	210	158	136	55	87	64	59	12.82	11.80
Total for Grasses		150	210	418	396	55	87	150	149	23.11	20.46
F	Allium spp.	-	-	-	1	-	-	-	1	-	.00
F	Camelina microcarpa (a)	-	-	23	12	-	-	12	5	.06	.07
F	Chorispora tenella (a)	-	-	_a 7	_b 14	-	-	3	9	.01	.07
F	Cirsium spp.	_a -	_a -	_b 17	_a 3	-	-	8	3	.53	.45
F	Collinsia parviflora (a)	-	-	-	2	-	-	-	1	-	.00
F	Cryptantha flavoculata	-	5	-	-	-	3	-	-	-	-
F	Cruciferae	-	-	12	-	-	-	4	-	.54	-
F	Cryptantha spp.	14	6	-	2	5	3	-	2	-	.01
F	Cymopterus spp.	-	-	-	1	-	-	-	1	-	.01
F	Descurainia pinnata (a)	-	-	21	7	-	-	10	4	.12	.02
F	Eriogonum brevicaulis	9	14	11	5	4	5	7	3	.52	.09
F	Erodium cicutarium (a)	-	-	13	25	-	-	4	8	.07	.33
F	Galium aparine (a)	-	-	62	55	-	-	26	21	2.00	.94
F	Gilia spp. (a)	-	-	-	5	-	-	-	3	-	.04
F	Hackelia patens	_a 2	_a -	_b 19	_a 3	1	-	8	3	.44	.42
F	Lathyrus brachycalyx	_a 2	_a 2	_b 25	_a 7	1	1	9	3	.31	.04

T y p e	Species	Nested Frequency				Quadrat Frequency				Average Cover %	
		'83	'89	'97	'02	'83	'89	'97	'02	'97	'02
F	Lappula occidentalis (a)	-	-	_a 8	_b 22	-	-	4	10	.02	.24
F	Lactuca serriola	_b 27	_a -	_a 6	_a 7	15	-	4	4	.02	.02
F	Lithospermum ruderales	-	-	-	4	-	-	-	2	-	.06
F	Machaeranthera canescens	4	-	1	-	2	-	1	-	.00	-
F	Phacelia spp.	-	-	-	9	-	-	-	4	-	.04
F	Physalis hederifolia	-	7	2	-	-	3	1	-	.00	-
F	Phlox longifolia	_a -	_a 3	_b 21	_a 6	-	1	10	3	.07	.04
F	Ranunculus testicularis (a)	-	-	_a 6	_b 14	-	-	2	9	.01	.10
F	Sisymbrium altissimum (a)	-	-	_b 35	_a 12	-	-	16	5	.18	.12
F	Streptanthus cordatus	_a 3	_a 8	_b 23	_{ab} 18	3	3	13	8	.06	.06
F	Tragopogon dubius	2	-	-	-	1	-	-	-	.00	-
F	Unknown forb-annual (a)	-	-	5	-	-	-	2	-	.03	-
F	Veronica biloba (a)	-	-	-	5	-	-	-	2	-	.03
Total for Annual Forbs		0	0	180	173	0	0	79	77	2.52	1.99
Total for Perennial Forbs		63	45	137	66	32	19	65	37	2.53	1.27
Total for Forbs		63	45	317	239	32	19	144	114	5.05	3.27

Values with different subscript letters are significantly different at $\alpha = 0.10$

BROWSE TRENDS --

Herd unit 16A, Study no: 17

T y p e	Species	Strip Frequency		Average Cover %	
		'97	'02	'97	'02
B	Amelanchier alnifolia	3	1	.41	-
B	Cercocarpus montanus	1	1	-	.38
B	Chrysothamnus nauseosus albicaulis	6	5	.90	.71
B	Cowania mexicana stansburiana	12	13	3.00	3.21
B	Gutierrezia sarothrae	5	4	.01	.15
B	Juniperus osteosperma	0	1	-	1.00
B	Mahonia repens	20	21	.07	.31
B	Prunus virginiana	6	2	.00	-
B	Quercus gambelii	9	6	1.58	.83
B	Rhus glabra cismontana	0	0	.03	-
Total for Browse		62	54	6.03	6.60

CANOPY COVER --

Herd unit 16A, Study no: 17

Species	Percent Cover	
	'97	'02
<i>Cowania mexicana stansburiana</i>	1	-
<i>Juniperus osteosperma</i>	2.4	3
<i>Quercus gambelii</i>	9.4	9

Key Browse Annual Leader Growth

Herd unit 16A , Study no: 17

Species	Average leader growth (in) '02
<i>Cowania mexicana stansburiana</i>	3.8

BASIC COVER --

Herd unit 16A, Study no: 17

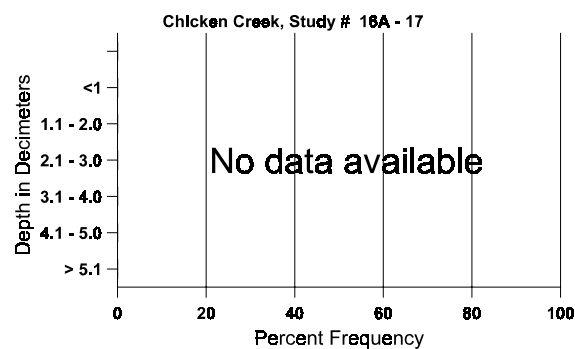
Cover Type	Nested Frequency		Average Cover %			
	'97	'02	'83	'89	'97	'02
Vegetation	323	310	2.25	7.00	29.85	29.54
Rock	245	260	4.75	4.25	13.62	22.55
Pavement	290	271	52.00	57.25	26.51	26.07
Litter	378	359	33.50	29.75	27.93	30.74
Cryptogams	13	1	0	0	.26	.15
Bare Ground	179	165	7.50	1.75	8.96	5.48

SOIL ANALYSIS DATA --

Herd Unit 16A, Study no: 17, Chicken Creek

Effective rooting depth (in)	Temp °F (depth)	pH	%sand	%silt	%clay	%OM	PPM P	PPM K	dS/m
21.7	48.0 (13.0)	6.9	39.4	30.7	29.8	2.8	11.6	192.0	1.2

Stoniness Index



PELLET GROUP FREQUENCY --

Herd unit 16A, Study no: 17

Type	Quadrat Frequency		Pellet Transect	
			Pellet Groups per Acre	Days Use per Acre (ha)
	'97	'02	'02	'02
Rabbit	-	2	-	-
Elk	2	-	26	2 (5)
Deer	39	36	957	74 (181)

BROWSE CHARACTERISTICS --

Herd unit 16A, Study no: 17

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Amelanchier alnifolia																		
Y	'83	1	-	-	-	-	-	-	-	-	1	-	-	-	33		1	
	'89	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	'97	-	3	-	-	-	-	-	-	-	3	-	-	-	60		3	
	'02	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
M	'83	-	1	-	-	-	-	-	-	-	1	-	-	-	33	18	8	
	'89	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	
	'97	-	-	1	-	-	-	-	-	-	1	-	-	-	20	49	69	
	'02	-	-	-	-	-	-	-	-	-	-	-	-	-	0	51	64	
D	'83	-	1	2	-	-	-	-	-	-	3	-	-	-	100		3	
	'89	-	-	1	-	-	1	-	-	-	2	-	-	-	66		2	
	'97	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	'02	-	-	3	-	-	-	-	-	-	3	-	-	-	60		3	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
		'83			40%			40%			-60%							
		'89			00%			100%			+18%							
		'97			75%			25%			-25%							
		'02			00%			100%										
Total Plants/Acre (excluding Dead & Seedlings)												'83	166	Dec:	60%			
												'89	66		100%			
												'97	80		0%			
												'02	60		100%			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Artemisia tridentata vaseyana																		
M	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0	34	30	0
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	0	25	36	0
X	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	20			1
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	40			2
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'83		00%			00%			00%										
'89		00%			00%			00%										
'97		00%			00%			00%										
'02		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'83	0	Dec:	-			
												'89	0		-			
												'97	0		-			
												'02	0		-			
Cercocarpus montanus																		
M	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	97	-	1	-	-	-	-	-	-	-	-	1	-	-	20	88	86	1
	02	-	-	-	-	-	1	-	-	-	-	1	-	-	20	61	82	1
X	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	40			2
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'83		00%			00%			00%										
'89		00%			00%			00%										
'97		100%			00%			00%			+ 0%							
'02		00%			100%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'83	0	Dec:	-			
												'89	0		-			
												'97	20		-			
												'02	20		-			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Chrysothamnus nauseosus																		
M	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	02	-	-	1	-	-	-	-	-	-	-	1	-	-	20	-	-	1
% Plants Showing		<u>Moderate Use</u>				<u>Heavy Use</u>				<u>Poor Vigor</u>				<u>%Change</u>				
'83		00%				00%				00%								
'89		00%				00%				00%								
'97		00%				00%				00%								
'02		00%				100%				00%								
Total Plants/Acre (excluding Dead & Seedlings)												'83	0	Dec:	-			
												'89	0		-			
												'97	0		-			
												'02	20		-			
Chrysothamnus nauseosus albicaulis																		
Y	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	89	4	-	-	-	-	-	-	-	-	4	-	-	-	133			4
	97	1	-	-	-	-	-	-	-	-	1	-	-	-	20			1
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
M	83	3	-	-	-	-	-	-	-	-	3	-	-	-	100	27	33	3
	89	3	-	-	-	-	-	-	-	-	3	-	-	-	100	28	34	3
	97	1	2	-	-	-	-	-	-	-	3	-	-	-	60	26	40	3
	02	1	-	-	-	-	-	-	-	-	1	-	-	-	20	26	34	1
D	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	97	2	-	-	-	-	-	-	-	-	1	-	-	1	40			2
	02	2	-	1	-	-	-	-	-	-	3	-	-	-	60			3
% Plants Showing		<u>Moderate Use</u>				<u>Heavy Use</u>				<u>Poor Vigor</u>				<u>%Change</u>				
'83		00%				00%				00%				+57%				
'89		00%				00%				00%				-48%				
'97		33%				00%				17%				-33%				
'02		00%				25%				00%								
Total Plants/Acre (excluding Dead & Seedlings)												'83	100	Dec:	0%			
												'89	233		0%			
												'97	120		33%			
												'02	80		75%			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Cowania mexicana stansburiana																		
S	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	97	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1	
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
M	83	-	1	1	-	-	-	-	-	-	2	-	-	-	66	43	72	2
	89	-	-	-	-	-	-	1	-	-	1	-	-	-	33	114	126	1
	97	-	1	4	1	1	1	-	-	-	8	-	-	-	160	50	48	8
	02	3	-	4	-	1	1	-	-	-	9	-	-	-	180	55	60	9
D	83	-	2	8	-	-	-	-	-	-	5	-	5	-	333			10
	89	-	1	2	-	1	1	-	-	-	3	-	-	2	166			5
	97	1	1	1	1	-	-	-	-	-	2	-	-	2	80			4
	02	6	-	4	-	-	4	-	-	-	9	-	-	5	280			14
X	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	100			5
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	80			4
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'83		25%			75%			42%			-50%							
'89		33%			50%			33%			+17%							
'97		25%			50%			17%			+48%							
'02		04%			57%			22%										
Total Plants/Acre (excluding Dead & Seedlings)												'83	399	Dec:	83%			
												'89	199		83%			
												'97	240		33%			
												'02	460		61%			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Gutierrezia sarothrae																		
Y	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	97	2	-	-	-	-	-	-	-	-	2	-	-	-	40		2	
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
M	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	97	7	-	-	-	-	-	-	-	-	7	-	-	-	140	9	15	7
	02	4	-	-	-	-	-	-	-	-	4	-	-	-	80	5	11	4
D	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	02	3	-	-	-	-	-	-	-	-	2	-	-	1	60		3	
X	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	40		2	
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	40		2	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'83		00%			00%			00%										
'89		00%			00%			00%										
'97		00%			00%			00%			-22%							
'02		00%			00%			14%										
Total Plants/Acre (excluding Dead & Seedlings)												'83	0	Dec:	0%			
												'89	0		0%			
												'97	180		0%			
												'02	140		43%			
Juniperus osteosperma																		
M	83	1	-	-	-	-	-	-	-	-	1	-	-	-	33	67	118	1
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0	116	145	0
	02	-	-	-	-	-	-	-	1	-	1	-	-	-	20	-	-	1
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'83		00%			00%			00%										
'89		00%			00%			00%										
'97		00%			00%			00%										
'02		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'83	33	Dec:	-			
												'89	0		-			
												'97	0		-			
												'02	20		-			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Mahonia repens																		
Y	83	40	-	-	-	-	-	-	-	-	40	-	-	-	1333		40	
	89	87	-	-	-	-	-	-	-	-	87	-	-	-	2900		87	
	97	22	-	-	1	-	-	-	-	-	23	-	-	-	460		23	
	02	23	-	-	-	-	-	-	-	-	23	-	-	-	460		23	
M	83	108	-	-	-	-	-	-	-	-	108	-	-	-	3600	5	4	108
	89	18	13	-	7	-	-	-	-	-	38	-	-	-	1266	4	5	38
	97	93	-	-	21	-	-	-	-	-	114	-	-	-	2280	3	4	114
	02	206	-	-	5	-	-	-	-	-	194	17	-	-	4220	2	4	211
D	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	02	8	-	-	-	-	-	-	-	-	7	-	-	1	160		8	
X	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	40		2	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
		'83			00%			00%			-16%							
		'89			10%			00%			-34%							
		'97			00%			00%			+43%							
		'02			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'83	4933	Dec:	0%			
												'89	4166		0%			
												'97	2740		0%			
												'02	4840		3%			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Prunus virginiana																		
S	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	97	4	-	-	-	-	-	-	-	-	4	-	-	-	80		4	
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
Y	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	97	7	3	-	-	-	1	-	-	-	11	-	-	-	220		11	
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
M	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	97	3	-	-	-	-	-	-	-	-	3	-	-	-	60	15	3	
	02	-	1	-	-	-	-	-	-	-	1	-	-	-	20	6	1	
D	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	97	-	-	1	-	-	-	-	-	-	1	-	-	-	20		1	
	02	-	-	1	-	-	-	-	-	-	-	-	-	1	20		1	
X	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	20		1	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'83		00%			00%			00%										
'89		00%			00%			00%										
'97		20%			13%			00%			-87%							
'02		50%			50%			50%										
Total Plants/Acre (excluding Dead & Seedlings)												'83	0	Dec:	0%			
												'89	0		0%			
												'97	300		7%			
												'02	40		50%			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Quercus gambelii																		
S	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	97	14	-	-	-	-	-	-	-	-	14	-	-	-	280		14	
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
Y	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	97	85	-	-	-	-	-	-	-	-	85	-	-	-	1700		85	
	02	14	-	-	89	-	-	1	-	-	104	-	-	-	2080		104	
M	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	97	18	-	-	-	-	-	-	-	-	18	-	-	-	360	113 140	18	
	02	2	-	-	-	-	-	1	2	-	5	-	-	-	100	104 65	5	
X	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	100		5	
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	100		5	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'83		00%			00%			00%										
'89		00%			00%			00%										
'97		00%			00%			00%			+ 6%							
'02		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'83	0	Dec:	-			
												'89	0		-			
												'97	2060		-			
												'02	2180		-			
Rhus glabra cismontana																		
M	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	0	88 128	0	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'83		00%			00%			00%										
'89		00%			00%			00%										
'97		00%			00%			00%										
'02		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'83	0	Dec:	-			
												'89	0		-			
												'97	0		-			
												'02	0		-			